

USSN 09/814,625
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IN THE CLAIMS

Amend claims 12, 13, 22-24 and 27; add new claims 31-32.

Claims 1-11. (Canceled).

¹
Claim ~~12~~ (Currently amended) A process for preparing a hot-melt pressure sensitive adhesive comprising polymerizing polyacrylate precursor monomers in an aqueous dispersion to yield a concentrated aqueous dispersion comprising between ~~68-87%~~ 68% and 87% by weight of the concentrated aqueous dispersion of gel-free, molecularly-dispersed, meltable polyacrylate particles having an at least bimodal size distribution in ~~size ranges~~ the range between 0.5 μ m and 1000 μ m Φ_1 ~~and~~

dewatering the concentrate aqueous dispersion under subatmospheric pressure during kneading and/or extrusion.

²
Claim ~~13~~ (Currently amended) The process according to Claim ~~12~~, wherein the monomers ~~comprises~~ comprise:

- ¹
- a) ~~a total of~~ 60-99.5% by weight, based on ~~a the~~ total weight of monomers, of (meth)acrylic esters with ~~C₄-C₁₂~~ C₄-C₁₂ ester radicals;
 - b) 0-10% by weight, based on the total weight of monomers, of (meth)acrylic acid or methacrylamide, and
 - c) up to 40% by weight, based on the total weight of monomers, of one or more hardening monomers.

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³
Claim ~~14~~. (Previously Presented)

²
The process according to Claim ~~13~~, wherein

the one or more hardening monomers are selected from the group consisting of (meth)acrylic C₁-C₃ esters, vinyl C₁-C₃ esters, styrene and other copolymerizable monomers having functional groups of thermal stability sufficient to survive the process.

⁴
Claim ~~15~~. (Previously Presented)

¹
The process according to Claim ~~12~~, wherein

the polymerizing polyacrylate precursor monomers in aqueous dispersion is conducted in the presence of one or more stabilizers present in said aqueous dispersion in a concentration of up to 4% by weight based on the total weight of the aqueous dispersion, and the one or more stabilizers are selected from the group consisting of water-soluble substances which are stable at a melting temperature of the polyacrylate and nonionic and anionic low-foam emulsifiers.

⁵
Claim ~~16~~. (Previously presented)

⁴
The process according to Claim ~~15~~, wherein

the water-soluble substances which are stable at a melting temperature of the polyacrylate are selected from the group consisting of short-chain polymers which carry amide groups.

⁶
Claim ~~17~~. (Previously Presented)

¹
The process according to Claim ~~12~~, wherein

the polymerizing polyacrylate precursor monomers in aqueous dispersion is conducted in the presence of one or more polyacrylate chain-length-regulating substances present in amounts of up to 10% by weight based on the weight of the polyacrylate.

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7
Claim 18. (Previously Presented) The process according to Claim 17, wherein the one or more polyacrylate chain-length-regulating substances are selected from the group consisting of vinyl ethers, fumaric esters, maleic esters, styrene and hydrophilic rosins.

8 1
Claim 18. (Previously Presented) The process according to Claim 12, wherein the polymerizing polyacrylate precursor monomers in aqueous dispersion is conducted in the presence of one or more linearly polymerizing, water-insoluble initiators which are soluble in the monomers in amounts of up to 1% by weight based on the weight of the monomers.

9 8
Claim 20. (Previously Presented) The process according to Claim 19, wherein the initiators are azo initiators.

10 1
Claim 21. (Previously Presented) The process according to Claim 12, wherein the polyacrylate is soluble without gel in an organic solvent and has a relative viscosity at 25°C in toluene of 1680-5000 and a melting range between 80°C and 170°C.

11 1
Claim 22. (Currently amended) The process according to Claim 12, which further comprises a) dewatering the concentrated aqueous dispersion to form a homogeneous, molecularly-disperse polyacrylate melt, and b) filming the homogeneous, molecularly-disperse polyacrylate melt to form a film by pressing the homogeneous, molecularly-disperse polyacrylate melt through a slot die, and

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wherein, the homogeneous, molecularly-disperse polyacrylate melt, was polymerized from at least one acrylate monomer comprising an ester group with between 6 and 12 carbon atoms.

¹²
Claim ~~23~~. (Currently amended) The process according to Claim ~~22~~,¹¹ wherein the concentrated aqueous dispersion is dewatered in a kneading device or extruder having a devolatilizing means operating at a temperature between 90-160°C to form the homogeneous, molecularly-disperse polyacrylate melt, or b) a the homogeneous, molecularly-disperse polyacrylate melt is filmed to form a film by pressing the homogeneous, molecularly-disperse polyacrylate melt through a slot die by means of toothed wheel pumps and/or extruder screws.

¹³
Claim ~~24~~. (Currently amended) The process according to Claim ~~22~~,¹¹ wherein prior to dewatering, one or more natural rubber lattices or synthetic rubber lattices are added to the concentrated aqueous dispersion in amounts of up to 70% by weight based on the polyacrylate, and/or before or after the dewatering, one or more inorganic fillers are added to the concentrated aqueous dispersion in amounts up to 40% by weight based on the polyacrylate and/or one or more polyacrylate-compatible plasticizers are added to the concentrated aqueous dispersion in amounts up to 30% by weight based on the polyacrylate.

¹⁴
Claim ~~25~~. (Previously presented) The process according to Claim ~~22~~,¹¹ wherein after dewatering, one or more tackifier resins are added to the concentrated aqueous dispersion in

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amounts up to 50% by weight based on overall polymer or up to 35% by weight based on the polyacrylate.

¹⁵
Claim ~~28~~ (Previously Presented)

¹⁴
The process according to Claim ~~25~~, wherein the one or more tackifier resins are selected from the group consisting of hydrocarbons having aromatic fractions.

¹⁶
Claim ~~27~~ (Currently amended)

¹¹
The process according to Claim ~~22~~, wherein after dewatering, one or more UV photoinitiators are added to the concentrated aqueous dispersion and/or incorporated into the polyacrylate by copolymerization in amounts of up to 2% by weight of the polyacrylate, and/or one or more polyunsaturated (meth)acrylic monomers are incorporated into the polyacrylate by copolymerization in amounts up to 5% by weight of the polyacrylate, and the film is crosslinked by subjecting the film to 2-10 J/cm² UV radiation and/or 10-100 kGy electron beams to yield an insoluble of up to 95% by weight of crosslinked acrylic polymer. *wave energy*

Claim 28. (Previously Presented)

The product produced by the process of Claim 12.

Claim 29. (Previously Presented)

An adhesive tape comprising a backing and the product according to Claim 28 coated on one or both sides of said backing.

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Claim 30. (Previously Presented) A method of producing an adhesive tape according to Claim 29 comprising:

- a) producing a hot-melt pressure sensitive adhesive according to the process of Claim 12; and
- b) coating a backing on one or both sides thereof with said hot-melt pressure sensitive adhesive.

¹⁷
Claim ~~31~~ (New) The process of claim ~~12~~, wherein at least one of the polyacrylate precursor monomers comprises an ester group an ester group with between 6 and 12 carbon atoms.

Claim 32 (New) Claim 12. A process for preparing a hot-melt pressure sensitive adhesive comprising polymerizing polyacrylate precursor monomers in an aqueous dispersion to yield a concentrated aqueous dispersion comprising molecularly-disperse meltable polyacrylate particles, wherein at least one of the polyacrylate precursor monomers is selected from the group consisting of an acrylate having an ester group of C₄₋₁₂, and a methacrylate having an ester group of C₄₋₁₂.